

Appln No. 10/017,759

Amdt date July 30, 2003

Reply to Office action of April 21, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Original) A composition comprising:
an acrylic copolymer formed from a plurality of monomers that comprises, on a percent-by-weight basis, based on the total weight of all monomers,

- about 5 to 90% soft acrylic monomer(s),
about 90 to 5% hard acrylic monomer(s),
about 1 to 5% hydroxy-lower organic (meth)acrylate(s),
about 0.1 to 0.5% multifunctional monomer(s),
about 0.1 to 2% acid monomer(s), and
about 0.5 to 2% wet abrasion resistance-enhancing monomer(s).

2. (Original) A composition as recited in claim 1, wherein the wet abrasion resistance-enhancing monomer(s) has at least one ureido functionality.

3. (Original) A composition as recited in claim 2, wherein the wet abrasion resistance-enhancing monomer(s) is selected from the group consisting of 3-allyloxy-2-hydroxypropylamino-ethylethyleneurea and N-(methacrylamidoethyl)ethyleneurea.

4. (Original) A composition as recited in claim 1, wherein the plurality of monomers consists essentially of butyl acrylate, methyl methacrylate, hydroxypropyl acrylate,

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tetraethylene glycol diacrylate, methacrylic acid, and 3-allyloxy-2-hydroxypropylaminoethylethylene urea.

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5. (Original) A composition as recited in claim 4, wherein the plurality of monomers is copolymerized in the presence of a reactive surfactant.

6. (Currently Amended) A composition as recited in claim 5, wherein the reactive surfactant is [~~styrene~~] sodium vinyl sulfonate.

7. (Original) A composition as recited in claim 4, further comprising a particulate filler and a mordant.

8. (Original) A composition as recited in claim 7, wherein the particulate filler is selected from the group consisting of silica gel, colloidal silica, titanium dioxide, magnesium carbonate, silicic acid, clays, zeolites, alumina, and mixtures thereof.

9. (Original) A composition as recited in claim 7, wherein the mordant comprises at least one cationic polymer.

10. (Original) A composition as recited in claim 7, wherein said at least one cationic polymer is poly(diallyldimethylammonium chloride) or poly(diallyldimethylammonium dimethylsulfate).

11. (Original) A composition as recited in claim 7, wherein said at least one cationic polymer is a copolymer of one or more hydroxyalkyl (meth)acrylates and a quaternary ammonium salt.

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12. (Original) A composition as recited in claim 11, wherein said copolymer is a copolymer of hydroxyethyl acrylate, hydroxyethyl methacrylate, and a quaternary salt of dimethylaminoethyl acrylate.

13. (Original) A composition as recited in claim 7, wherein the mordant comprises poly(diallyldimethylammonium chloride) and a copolymer of one or more hydroxyalkyl (meth)acrylates and a quaternary ammonium salt.

14. (Original) A composition as recited in claim 1, further comprising a particulate filler and a mordant.

15. (Original) A composition as recited in claim 14, wherein the particulate filler is selected from the group consisting of silica gel, colloidal silica, titanium dioxide, magnesium carbonate, silicic acid, clays, zeolites, alumina, and mixtures thereof.

16. (Original) A composition as recited in claim 14, wherein the mordant comprises at least one cationic polymer.

17. (Original) A composition as recited in claim 14, wherein the mordant comprises poly(diallyldimethylammonium chloride) and a copolymer of one or more hydroxyalkyl (meth)acrylates and a quaternary ammonium salt.

18. (Original) A composition as recited in claim 1, wherein the acrylic copolymer is formed by emulsion polymerization.

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Applicants' claim 1 also includes 1-5% of hydroxy-lower organic (meth)acrylate(s). The Examiner cites Baumstark et al., column 6, lines 40-43, as purportedly disclosing such monomers. In fact, the reference merely discloses a broad sub-genera of optional compounds included "to cause postcrosslinking" (i.e., crosslinking that does not occur until film formation). The reference identifies carbonyl-containing monomers (e.g. acrolein, methyacrolein, diacetoneacrylamide, and vinylacetoacetate; these compounds are preferably also combined with a polyamine compound. The reference goes on to identify other monomers which produce postcrosslinking, for example, 2-acetoacetoxyethyl methacrylate, compounds containing hydrolyzable organosilicon bonds, as well as epoxy-, hydroxyl- and/or N-alkylol-containing monomers such as glycidyl acrylate, hydroxyethyl, hydroxy-n-propyl butylacrylate and methacrylate. One cannot read that broad disclosure as directing the skilled person to select, from the large number of possibilities, the specific monomer(s) included in Applicants' claims, namely, hydroxy-lower organic (meth)acrylate(s). Notably, none of the examples in the Baumstark et al. reference contain hydroxypropyl acrylate.

Applicants' claim 1 also calls for about 0.1 to 2% acid monomer(s). Although it is true that acid monomers are identified in the Baumstark et al. reference, the reference does not provide a clear and unequivocal disclosure to select acid monomers as opposed to acrylamide, methacrylamide, or similar compounds listed in the vast number of monomers disclosed in the reference at columns 4 - 7.

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19. (Original) A composition as recited in claim 1, wherein the plurality of monomers includes a positive amount up to about 50% by weight of one or more styrenic monomers.

20. (Original) A composition as recited in claim 19, wherein said one or more styrenic monomers are selected from the group consisting of styrene, α -methyl styrene, and divinyl benzene.

21-48 (Cancelled)

49. (Original) A composition comprising:
an acrylic copolymer formed from a plurality of monomers that comprises, on a percent-by-weight basis, based on the total weight of all monomers,
about 20 to 60% butyl acrylate,
about 30 to 70% methyl methacrylate,
about 1 to 5% hydroxypropyl acrylate,
about 0.1 to 0.5% triethylene glycol diacrylate,
about 0.1 to 2% methacrylic acid, and
about 0.1 to 2% copolymerizable monomer having at least one ureido functionality.